

2004 GALVESTON BAY INVASIVE SPECIES RISK ASSESSMENT
INVASIVE SPECIES SUMMARY

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Common Name: Channeled apple snail
Latin Name: <i>Pomacea canaliculata</i>
Category: Terrestrial Animal, or Aquatic Animal
Place of Origin: South America
<p>Place of Introduction: “Earlier reports in Texas of channeled or Florida apple snails (<i>P. paludosa</i>) by Fullington (1978), Neck (1984, 1986), and Neck and Schultz (1992) were apparently based on a small number of shells and not established populations. Actual applesnail populations existed in Harris County in 1989 and 1990 (Neck and Schultz 1992) and in a Texas A&M University study pond in 1989 (Collins 1996).</p> <p>In July 2000, a channeled applesnail population was confirmed by Texas Parks and Wildlife Department personnel (TPW) in the American Canal, Brazoria and Galveston counties, between Houston and Alvin in southeastern Texas. This population is centrally-located in the Texas rice belt where potential agricultural damage is possible. This report summarizes results of subsequent surveys and observations in November and December 2000 in the American Canal, Mustang Bayou, and other waters in the Alvin area of southeastern Texas. Status of historical and additional recent applesnail reports in Texas is also included (http://www.cdfa.ca.gov/phpps/ppd/Entomology/Snails/Applesnail.htm).”</p> <p><i>P. canaliculata</i> populations are also established in Armand Bayou, a tributary of Clear Creek in Southeast Harris County, Texas</p>
Date of Introduction: 1989 and 1990, populations observed, see above
<p>Life History: “Reproduction: <i>Pomacea canaliculata</i> is sexual mature at the size of 2.5 cm/1 inch. The reproductive rate of this snail varies with the temperature and partly by the availability of food. During fall and winter, the reproduction rate is at its lowest point, while with the raising temperatures in spring their reproduction rate increases. Eggs: The reddish (due to the high carotenoid content) eggs are loosely attached to each other. They are attached on object above the waterline and their size varies from 2.20 to 3.5 mm (0.5 to 0.9 inch) diameter. An average clutch contains 200 to 600 eggs. Behavior: amphibious animal; submerged during the day, hidden in the vegetation near the border and the surface. More active during the night, also leaves the water in search for fresh vegetation. The activity rate of this snail varies highly with the water temperature. Below 18°C they hardly move around, this in contrast with higher temperatures (25°C). Nevertheless, <i>Pomacea canaliculata</i> is more resistant to lower temperatures than most other snails from the genus <i>Pomacea</i> (http://www.applesnail.net/).”</p>
Growth/Size: “Neck and Shultz (1986) reported a maximum of 63mm for specimens they collected in Harris county, Texas (http://www.gsmfc.org/nis/nis/Pomacea_canaliculata.html).”
<p>Feeding Habits/Diet: “Eats almost all types of plants; can also be fed with fish food; isn't suited for planted aquaria at all; to be avoided unless you don't have plants or other vegetation in your aquarium (http://www.applesnail.net/).</p> <p>This species is mainly herbivorous, typically feeding on macrophytes, and occasionally feeding on the eggs and juveniles of other snails. Over its native range, this species seems to prefer the macrophytes <i>Zanichellia palustris</i>, <i>Myriophyllum elatinoides</i>, and <i>Chara contraria</i>, and to a lesser degree <i>Rorippa nasturtium-aquaticum</i>, and <i>Potamogeton striatus</i> (Estebenet, 1995) (http://www.gsmfc.org/nis/nis/Pomacea_canaliculata.html)”</p>
<p>Habitat: “Salinity Tolerance: Albrecht et al. (1996) reported this species as capable of tolerating a broad range of salinity conditions.</p> <p>Temperature Tolerance: This species may tolerate cold temperatures better than most other species of the genus given its natural range extends over colder parts of South America. Neck and Shultz (1992) reported introduced specimens in Harris county Texas survived brief, but extreme cold weather in the winter of 1989 (http://www.gsmfc.org/nis/nis/Pomacea_canaliculata.html).”</p>
Physical Description: “ Shell: The shell of this apple snail species is globose and relatively heavy (especially in older snails). The 5 to 6 whorls are separated by a deep, indented suture (hence the name 'canaliculata' or 'channeled'). The shell opening (aperture) is

large and oval to round. Males are known to have a rounder aperture than females. The umbilicus is large and deep. The overall shell shape is similar to that of *Pomacea lineata*, except the deeper sutures and more globose shape in *canaliculata*. The size of these snails varies from 40 to 60 mm wide and 45 to 75 mm high depending on the conditions. The colour varies completely yellow and green (cultivated forms) to brown with or without dark spiral bands (wild form). The shell growth of this species occurs mainly in spring and summer, while it stagnates in fall and winter. **Operculum:** The operculum is moderately thick and corneous. The structure is concentric with the nucleus near the centre of the shell. The colour varies light (in young snails) to dark brown. The operculum can be retracted in the aperture (shell opening). **Body:** The colour of the body varies from yellow (cultivated), brown to nearly black, with yellow spots on the siphon, but not as much on the mouth as in *Pomacea bridgesii*. When at rest, the tentacles are curled under the shell. (<http://www.applesnail.net/>).”

References (includes journals, agency/university reports, and internet links):

1. <http://www.applesnail.net/>. Accessed December 21, 2002
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5. Neck, R.W., and J.G. Schultze. 1992. First record of a living channeled applesnail, *Pomacea canaliculata* (Pilidae), from Texas. The Texas Journal of Science 44:115-116.
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8. Robert G. Howells. 2001. History and Status of Applesnail (*Pomacea* spp.): Introductions in Texas. Management Data Series No. 183. Texas Parks and Wildlife Department Inland Fisheries Division. Austin, Texas. 12 pages
9. http://www.gsmfc.org/nis/nis/Pomacea_canaliculata.html